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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/778,919	02/08/2001	Yasunobu Hashimoto	1466.1029	5835

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STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER	
AWAD, AMR A	

ART UNIT	PAPER NUMBER
2675	

DATE MAILED: 09/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/778,919	HASHIMOTO, YASUNOBU	
	Examiner	Art Unit	
	Amr Awad	2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 30, 2004 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-15 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. All independent claims included the limitation, "wherein a display line pitch is smaller than a cell arrangement pitch in the column direction". This limitation is indefinites because applicant shows in the figures 4-5, the display line to be the row line encompassing the delta shape display cell (i.e., the row that includes element 51, 52 and 53), and therefore, the pitch of the display line is the width of such row line. However, applicant provided no explanation of what the pitch of the column direction. A clarification or correction is respectfully requested.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Betsui et al. (US patent NO. 5,825,128; hereinafter referred to as Betsui) in view of Shigeta (US patent NO. 5,659,226).

As to independent claim 1, Betsui a method for displaying an image on a plasma display (figure 3) that includes, using a display device having a display surface (11) including plural cell columns each of which is a set of cells having the same light emission color, the display device having a cell arrangement structure in which cell positions in the column direction are shifted from each other between the neighboring cell columns (col. 4, lines 17-48).

Betsui does not expressly teach that the display line pitch is smaller than a cell arrangement pitch in the column direction. However, applicant shows in the figures 4-5, the display line to be the row line encompassing the delta shape display cell (i.e., the row that includes element 51, 52 and 53), and therefore, the pitch of the display line is the width of such row line. However, applicant provided no explanation of what the pitch of the column direction. Therefore, examiner may consider that the pitch of the column direction in the distance between one column have specific color and the immediate column having the same color (i.e., the distance between the first 51 and the next 51 in

figure 3 for the color red). Examiner can also considered that the cell arrangement pitch in the column direction is the distance between two consecutive colors in two adjacent columns (i.e., elements 51 & 53 in figure 3). Examiner believes that either interpretation is implicitly taught by Pat-128. For example looking at figures 4A-4B of Pate-126, we can see that the pitch of the display line is the row represented by two consecutive 1's in figure 4A. The cell arrangement pitch of the column direction can be the distance between the center of one color (for example G) and the next immediate column having the same color. Or, the cell arrangement pitch of the column direction can be the distance between the center of one color (for example G) and the next immediate color in the adjacent column (i.e., B). In either interpretation, Pat-128 shows that the display line pitch is smaller than a cell arrangement pitch in the column direction as shown in the figures. This is simply because the width of the display line is substantially equal to the length of one color component (R, G or B), while the length of the cell pitch in the column direction is at least the width of one color component (R, G or B) plus the gap between the two adjacent color components.

Betsui does not expressly teach performing an interlaced display by changing the combination of cells of a display line that is perpendicular to the column direction in every field between the neighboring cell columns of the same light emission color.

However, Shigeta teaches a plasma display device that includes interlacing (between the odd and the even lines) by changing the combination of cells of display that is perpendicular to the column direction in every field between the neighboring cell

columns of the same light emission color (figures 5-6, 7, col. 5, lines 7-54 and col. 6, lines 23-38).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include the teaching of Shigeta interlacing by changing the combination of the cells of the display, to be incorporated to Betsui's device so as motivated by Shigeta, to increase in fineness of the display (abstract), and to make it easier to precisely manufacturing the row electrodes in excess of a patterning precision and width of the electrodes (col. 1, lines 42-45).

As to claim 2, the specification of the invention does not specify what is the virtual display surface. Therefore, the luminance cited in Shigeta's reference (col. 6, lines 23-38) fairly reads on the claim because the virtual display can be the medium in which the display is observed.

As to claim 3, the claim is an apparatus claim corresponds to method claim 1 and would be analyzed as previously discussed with respect to claim 1.

As to claim 4, figures 4A, 4B and 5A of Betsui's device fairly reads on the constant pitch of claim 3 (see Betsui, col. 6, lines 24-39).

As to claim 5, the specification of the invention does not specify what is the virtual display surface. Therefore, the luminance cited in Shigeta's reference (col. 6, lines 23-38) fairly reads on the claim because the virtual display can be the medium in which the display is observed.

As to claim 6, having a single color display is well known in the art of plasma display, which what is disclosed in claim 6.

As to claim 7, as can be seen in both references; the displays have different emission colors (see 4A of Betsui and figure 6 of Shigeta).

As to claim 8, the arrangement of Shigeta (figures 6 and 10) fairly reads on claim 8; see column 5, lines 7-48).

As to claims 9-10, as can be seen in figures 8; Shigeta shows an interlaced image being converted to an interlaced image (col. 6, lines 23-37).

As to claim 11, as seen above; both Betsui and Shigeta teach a plasma display device.

As to claim 12, Betsui (figures 3, 4A) teaches partition (wall 29) for dividing a discharge space for each cell column, and the discharge space is continuous over the entire length of the display surface (col. 4, lines 10-36).

As to claim 13, as can be seen in figure 1 of Betsui's device, the scanning electrodes (X & Y) are arranged to straddle over all columns for selecting one cell in each cell column of each field (4, lines 18-26).

As to independent claims 14-15, the claims are substantially similar to the apparatus of claim 3, except that claims 14-15 recite having the number of display lines utilized is twice a number of scanning electrodes utilized. As can be seen in figures 5A-5B, Betsui shows that the number of display lines is twice the number of the scanning electrodes because each n electrodes would utilize almost 2n of the display lines.

Response to Arguments

6. Applicant's arguments filed 7/30/2004 have been fully considered but they are not persuasive.

Applicant's main argument is directed to show that the cited references do not teach that in every field between the neighboring cell columns of the same light emission color, wherein a display line pitch is smaller than a cell arrangement pitch in the column direction. Examiner respectfully disagrees.

Applicant shows in the figures 4-5, the display line to be the row line encompassing the delta shape display cell (i.e., the row that includes element 51, 52 and 53), and therefore, the pitch of the display line is the width of such row line. However, applicant provided no explanation of what the pitch of the column direction. Therefore, examiner may consider that the pitch of the column direction in the distance between one column have specific color and the immediate column having the same color (i.e., the distance between the first 51 and the next 51 in figure 3 for the color red). Examiner can also considered that the cell arrangement pitch in the column direction is the distance between two consecutive colors in two adjacent columns (i.e., elements 51 & 53 in figure 3). Examiner believes that either interpretation is implicitly taught by Pat-128. For example looking at figures 4A-4B of Pate-126, we can see that the pitch of the display line is the row represented by two consecutive 1's in figure 4A. The cell arrangement pitch of the column direction can be the distance between the center of one color (for example G) and the next immediate column having the same color. Or, the cell arrangement pitch of the column direction can be the distance between the

center of one color (for example G) and the next immediate color in the adjacent column (i.e., B). In either interpretation, Pat-128 shows that the display line pitch is smaller than a cell arrangement pitch in the column direction as shown in the figures. This is simply because the width of the display line is substantially equal to the length of one color component (R, G or B), while the length of the cell pitch in the column direction is at least the width of one color component (R, G or B) plus the gap between the two adjacent color components.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amr Awad whose telephone number is (703)308-8485. The examiner can normally be reached on Monday through Fridary from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on (703)305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AMR A. AWAD
PRIMARY EXAMINER

A. A.